Space Weather Forecast

Issued on Wednesday 12 February 2025 at 01:16 Local

This forecast provides a four-day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of isolated Moderate flares. Chance of Minor Geomagnetic storms (G1), most likely late Day 2 into Day 3 (12-13 Feb).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Moderate with one isolated Moderate class flare observed, peaking at 11/0535 UTC. This was from what has been the most active region on the disc, but has now rotated over the northwest limb. There are seven sunspot regions currently on the visible disc, however these are generally small and simple. The larger region in the southeast, is perhaps the most notable, however this appears to be a mature region dominated by its large leader, with only limited complexity or activity.

No Earth directed Coronal Mass Ejections (CMEs) were observed from available imagery.

Solar Wind / Geomagnetic Activity: The ongoing influence of the fast wind from a coronal hole was observed. Solar wind speeds persisted at elevated, between 500-600km/s. Interplanetary Magnetic Field strength was weak with the north-south component also weak but mainly negative (southwards-directed) with only brief positive intervals. Geomagnetic activity was Unsettled to Active (Kp3-4).

The waning influence of the fast wind was observed. Solar wind speeds initially around 580km/s saw a slow decline to around 510km/s. Interplanetary Magnetic Field strength, was weak. The north-south component, was also weak and variable in direction, slightly favouring negative (southwards-directed) conditions. Geomagnetic activity was Unsettled to Active (Kp3-4).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background throughout with no Solar Radiation Storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate to Low activity expected with a chance of further Moderate class flares.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs. Ongoing fast solar winds are expected to gradually decline during the start of Day 1 (12 Feb), before then transitioning into a further and more prolonged period of fast winds later Day 1 and into Day 2 (12-13 Feb). Initially Quiet to Unsettled geomagnetic activity with Active intervals forecast by the end of Day 1 (12 Feb)

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.

with a chance of G1 Minor Storms, most likely with the transition into the fast wind regime Days 1-2 (12-13 Feb).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to remain at background throughout with no Solar Radiation Storms occurring.

Geomagnetic Storms

Geomagnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	50	50	30	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X-Ray Flares

X-Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 (M Class)	Yes	40	40	50	50
Very Active	R3-R5 (X Class)	No	1	1	5	5

Solar Radiation Storms (High Energy Protons)

Radiation Storms Probability (Exceedance)	Level ($cm^{-2}sr^{-1}s^{-1}$)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	1	1	1
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and/or 50 MeV ≥ 10pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 370 900 0100 Email: enquiries@metoffice.gov.uk

© Crown Copyright 2025. All Rights Reserved.